



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Atty. Docket No. 97002-C)

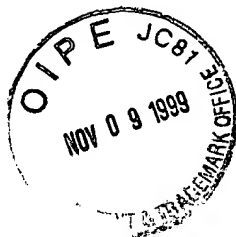
In the Application of:

Krafft et al.

Serial No.: 09/369,236

Filed: August 4, 1999

For: Amyloid β Protein (Globular
Assembly and Uses Thereof)



Examiner: Not Assigned

Group Art Unit: 1641

TRANSMITTAL LETTER

Asst. Commissioner for Patents
Washington, D.C. 20231

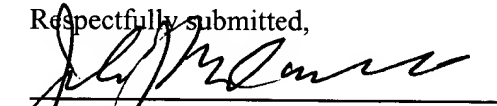
Dear Madam or Sir:

In regard to the above identified application,

1. We are transmitting herewith the attached:
 - a) Information Disclosure Statement;
 - b) PTO Form 1449 and copies of cited references;
 - c) Return receipt postcard
2. With respect to fees:
 - a) No fees are required.
3. GENERAL AUTHORIZATION: Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490.
4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the documents itemized in paragraph 1 are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Asst. Commissioner for Patents, Washington, D.C. 20231 on November 4, 1999.

Date: November 4, 1999

Respectfully submitted,


John J. McDonnell
Registration No. 26,949

Gau/1641

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Atty. Docket No. 97002-C)

#4
new

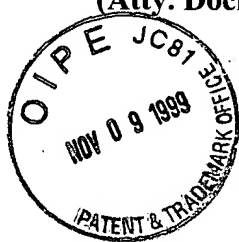
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Group Art Unit: 1641 NOV 12 1999

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INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Madam or Sir:

Pursuant to 37 C.F.R. §§ 1.97 & 1.98, the Applicants wish to make the following references listed on the enclosed Form PTO-1449 of record in the above-identified application. This Information Disclosure Statement is in compliance with the continuing duty of candor as set forth in 37 C.F.R. Section 1.56.

Copies of the references cited on the Form PTO-1449 are enclosed. Also, attached to each reference in a language other than English is a translation of that reference or an explanation of the relevance of that reference in accordance with 37 C.F.R. § 1.98 (a) (3). For Information Disclosure Statements submitted after receipt of a foreign Search Report, a copy of such Search Report is attached.

The Examiner is respectfully requested to consider the references in their entirety and to so indicate by initialing the appropriate box on the Form PTO-1449. The filing of this Information Disclosure Statement shall not be construed as a representation that a search has

been made. Likewise, the filing of this Information Disclosure Statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

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Foreign Patent Documents

WO 94/10569 Filed: September 1, 1993 PCT

Other Documents

Busciglio, J., et al. (1995) β -Amyloid Fibrils Induce Tau Phosphorylation and Loss of Microtubule Binding. *Neuron* **14**, 879-888.

Cai, X.D., et al. (1993) Release Of Excess Amyloid Beta Protein From a Mutant Amyloid Beta Protein Precursor. *Science* **259**, 514-516.

Chartier-Harlan, M.C., et al. (1991) Early-onset Alzheimer's Disease Caused by Mutations at Codon 717 of the β -Amyloid Precursor Protein. *Nature*, **353**, 844-846.

Citron, M., et al. (1992) Mutation Of the Amyloid Precursor Protein In Familial Alzheimer's Disease Increases Beta Protein Production. *Nature* **360**, 672-674.

Esch, F. S., et al. (1990) Cleavage Of Amyloid Beta Peptide During Constitutive Processing Of Its Precursor. *Science* **248**, 1122-1124.

Glenner, G. G. & Wong, C. W. (1984a) Alzheimer's Disease Initial Report Of the Purification and Characterization Of a Novel Cerebro Vascular Amyloid. *Biochem. Biophys. Res. Commun.* **120**, 885-890.

Glenner, G. G. & Wong, C. W. (1984b) Alzheimer's Disease and Downs Syndrome Sharing Of a Unique Cerebrovascular Amyloid Fibril Protein. *Biochem. Biophys. Res. Commun.* **122**, 1131-1135.

Goate, A., et al. (1991) Segregation of a Missense Mutation in the Amyloid Precursor Protein Gene with Familial Alzheimer's Disease. *Nature*, **349**, 704-706.

Iversen, L. L., et al. (1995) The toxicity in vitro of β -amyloid protein. *Biochemistry* **311**, 1-16.

Kang, J., et al. (1987) *Nature* **325**, 733-736.

Kuo, Y.-M., et al. (1996) Water-soluble A β (N-40, N-42) Oligomers in Normal and Alzheimer Disease Brains. *J. Biol. Chem.* **271**(8), 4077-4081

Ladror, U. S., et al. (1994) "Cleavage at the Amino and Carboxy Termini of Alzheimer's Amyloid- β by Cathepsin D" *J. Biol. Chem.* **269**, 18422-18428.

Ladu, M. J., et al. (1994) Isoform-Specific Binding of Apolipoprotein-E to Beta-Amyloid. *J. Biol. Chem.* **269**, 23403-23406.

Ladu, M. J., et al. (1994) Purification of Apolipoprotein-E Attenuates Isoform-Specific Binding to Beta-Amyloid. *J. Biol. Chem.* **269**, 9039-9042.

Lambert, M. P., et al. (1994) b/A4-Evoked Degeneration of Differentiated SH-Sy5Y Human Neuroblastoma Cells. *J. Neurosci. Res.* **39**, 377-384.

Levy-Lahad, E., et al. (1995) A Familial Alzheimer's Disease Locus on Chromosome 1. *Science* **269**: 970-973.

Lorenzo, A. & Yankner, B. A. (1994) β -Amyloid neurotoxicity requires fibril information and is inhibited by Congo red. *Proc. Natl. Acad. Sci. USA* **91**, 12243-12247.

Ma J, et al. (1994) The amyloid-associated proteins α 1-antichymotrypsin and apolipoprotein E promote the assembly of the Alzheimer β -protein into filaments. *Nature* **372**: 92-94.

Mann, D. M., et al. (1996) Amyloid beta protein (Abeta) deposition in chromosome, 14-linked Alzheimer's disease: predominance of Abeta42(43). *Annals of Neurol.* **40**, 149-56.

Masters, C.L., et al. (1985a) Neuronal Origin Of a Cerebral Amyloid. Neurofibrillary Tangles Of Alzheimer's Disease Contain the Same Protein As the Amyloid Of Plaque Cores and Blood Vessels. *EMBO J.* **4**, 2757-2764.

Masters, C.L., et al. (1985b) Amyloid Plaque Core Protein In Alzheimer's Disease and Down Syndrome. *Proc. Natl. Acad. Sci. U S A* **82**, 4245-4249.

May, P. C., et al. (1992) β -Amyloid Peptide In Vitro Toxicity: Lot-to-Lot Variability. *Neurobiol. Aging* **13**, 605-607.

Mullan, M., et al. (1992) A Pathogenic Mutation for Probable Alzheimer's-Disease in the APP Gene at the N-Terminus of Beta-Amyloid. *Nature Genetics* **1**, 345-347.

Murrell, J., et al. (1991) A mutation in the Amyloid Precursor Protein Associated with Hereditary Alzheimer's Disease. *Science*, **254**, 97-9.

Namgung, U., et al. (1995) Long-term potentiation in vivo in the intact mouse hippocampus. *Brain Res.* **689**, 85-92.

Oda, T., et al. (1994) Purification and Characterization of Brain Clusterin. *Biochem. Biophys. Res. Commun.*, **204**, 1131-1136.

Oda, T., et al. (1995) Clusterin (apoJ) Alters the Aggregation of Amyloid β -Peptide ($A\beta_{1-42}$) and Forms Slowly Sedimenting $A\beta$ /Clusterin complexes that cause Oxidative Stress. *Exptl. Neurol.* **136**, 22-31.

Pike, C. J., et al. (1993) Neurodegeneration Induced by β -Amyloid Peptides in vitro: The Role of Peptide Assembly State. *J. of Neurosci.* **13(4)**, 1676-1687.

Roher, A. E., et al. (1993) Morphological and biochemical analyses of amyloid plaque core proteins purified from Alzheimer's disease brain tissue. *Neurochem.* **61**, 1916-1926.

Roher, A. E., et al. (1993) β -Amyloid-(1-42) is a major component of cerebrovascular amyloid deposits: Implication for the pathology of Alzheimer disease. *Biochemistry* **90**, 10836-10840

Roher, A. E., et al. (1996) Morphology and toxicity of A-(1-42) Dimer Derived from Neuritic and Vascular Amyloid Deposits of Alzheimer's Disease. *J. Biol. Chem.* **271(34)**, 20631-20635

Scheuner, D., et al. (1996) Secreted amyloid beta-protein similar to that in the senile plaques of Alzheimer's disease is increased in vivo by the presenilin 1 and 2 and APP mutations linked to familial Alzheimer's disease. *Nature Medicine* **2**, 864-870.

Selkoe, D. J. (1994) Normal and abnormal biology of the beta-amyloid precursor protein. Cowan, W. M. (Ed.). *Ann. Rev. of Neurosci.*, Vol. 17. ix+623p. Annual Reviews Inc.: Palo Alto, California, USA., 489-517.

Sherrington, R., et al. (1995) Cloning a gene bearing missense mutations in early onset familial Alzheimer's disease. *Nature* **375**: 754-760.

Simmons, L. K., et al. (1994) Secondary Structure of Amyloid β Peptide Correlates with Neurotoxic Activity In Vitro. *Molec. Pharmacol.* **45**, 373-379.

Sisodia, S. S., et al. (1990) Evidence That Beta Amyloid Protein In Alzheimer's Disease Is Not Derived By Normal Processing. *Science* **248**, 492-495.

Snow, A. D., et al. (1992) A Rat Model to Study the Effects of BAP-Containing Amyloid in Brain. ("Brain amyloid accumulation in rats within 1 week of infusion of amyloid- β and a plaque component") *Soc. Neurosci. Abstr.* **18**, 1465, Ab. 616.6.

Snyder, S. W., et al. (1994) Amyloid β Aggregation: Selective Inhibition of Aggregation in Mixtures of Amyloid with Different Lengths. *Biophys. J.* **67**, 1216-28.

Strittmatter, W. J., et al. (1993) Apolipoprotein E: High-avidity binding to β -amyloid and increased frequency of type 4 allele in late-onset familial Alzheimer disease. *Proc. Natl. Acad. Sci. USA* **90**, 1977-1981.

Suzuki, N., et al. (1994) An increased percentage of long amyloid β protein secreted by familial amyloid protein precursor (beta-APP-717) mutants. *Science* **264**, 1336-1340.

Tamaoka, A. et al. (1994) Biochemical Evidence for the Long-Tail Form (A β -1-42-43) of Amyloid-Beta Protein as a Seed Molecule in Cerebral Deposits of Alzheimer's Disease. *Biochem. Biophys. Res. Commun.* **205**, 834-842.

Tanzi, R. E., et al. (1987) Amyloid Beta Protein Gene Complementary DNA, mRNA Distribution and Genetic Linkage Near the Alzheimer Locus. *Science* **235**, 880-884.

Wisniewski, T., et al. (1994) Alzheimer's Disease and Soluble A β . *Neurobiol. Aging* **15(2)**, 143-152

Wright C. I., et al. (1993) Neuroglial cholinesterases in the normal brain and in Alzheimer's Disease: relationship to plaques, tangles and patterns of selective vulnerability. *Ann. Neurol.* **34**, 373-384.

Yankner, B. A. (1996) Mechanisms of Neuronal Degeneration in Alzheimer's Disease. *Neuron* **16**, 921-932.

Zhang, C., et al. (1994) Focal Adhesion Kinase Expressed by Nerve Cells Lines Shows Increased Tyrosine Phosphorylation in Response to Alzheimer's A β Peptide. *J. Biol. Chem.* **269**, 25247-25250.

This Information Disclosure Statement is being filed:

- ☒ within three months of the filing date of a national application; within three months of the date of entry into the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or before the mailing date of a first Office Action on the merits. 37 C.F.R. § 1.97 (b)
- ☐ **after** three months of the filing date of a national application, or the date of entry into the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or **after** the mailing date of a first Office Action on the merits, but **before** the mailing date of a Final Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311 (whichever occurs first), and includes (37 C.F.R. § 1.97 (c):
- ☐ the Certification under 37 C.F.R. § 1.97(e) (see "Certification" below)

OR

- ☐ the fee of \$230 set forth in 37 C.F.R. § 1.17(p) (see "Fees" below).
- ☐ **after** a Final Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311 (whichever occurs first), but before, or simultaneously with, the payment of the issue fee, and includes the Certification under 37 C.F.R. § 1.97(e) (see "Certification" below), and the Petition Fee set forth in 37 C.F.R. § 1.17(i) (see "Fees" and "Method of Payment of Fees" below). Applicants hereby petitions for consideration of the Information Disclosure Statement submitted herewith and the accompanying references in examination of the subject patent application.

CERTIFICATION

- ☐ The **undersigned** hereby certifies that each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign patent application not more than three months prior to the filing of the Information Disclosure Statement.
- ☐ The **undersigned** hereby certifies that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign patent application or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the Information Disclosure Statement.

FEES

- ☒ **No fee** is owed by the applicant(s).

- ☐ The **IDS Fee of \$230.00** under 37 C.F.R. § 1.17(p) is enclosed herewith.
- ☐ The **Petition Fee of \$130.00** set forth in 37 C.F.R. § 1.17(i) is enclosed herewith.

METHOD OF PAYMENT OF FEES

- ☐ Attached is a check in the amount of \$.
- ☐ Charge Deposit Account No. 13-2490 in the amount of \$. (A duplicate copy of this communication is enclosed for that purpose.)

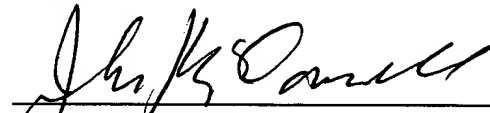
CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

The undersigned hereby certifies that this Information Disclosure Statement and any documents referred to herein as being attached or enclosed are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Asst. Commissioner for Patents, Washington, D.C. 20231 on November 4, 1999.

REMARKS

The documents referred to herein were made of record in the parent application (08/796,089) to the instant application. Should there be any questions regarding this Information Disclosure Statement, the Examiner is invited to contact the undersigned. Please charge any underpayment or credit any overpayment of fees occasioned by this communication to Deposit Account No. 13-2490.

Respectfully submitted,



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Date: November 4, 1999

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